Activity: Translations – Tiling the Plane

1. First construct a parallelogram (hint use parallel lines then hide them afterwards)
2. After constructing the parallelogram, select the vertices and choose Quadrilateral Interior from the Construct menu (if you do not see it in the menu you might have selected something else – just click on some white space and re-select)
3. Construct a line segment and label the points. Select the points left then right and select Mark Vector from the Transform drop down menu.
4. You should observe some dark dots zoom across the line segment from A to B (or whatever you have labeled your points)
5. Now select the entire parallelogram and choose Translate … from the Transform drop-down menu. It should automatically select Marker in a new window. Press Translate and you should see another parallelogram.
6. Select one of the points on the line segment and move it around. What do you observe? Why?
7. Now repeat the process but for one of the left most edge of the initial parallelogram. So, select two points and then Mark Vector (as in step 3).
8. Now select all your parallelograms and select Translate … from the Transform menu as in step 5.
9. Finally move the marked segment and the side of the parallelogram to tile the plane
10. The big question now is What is a vector?